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DOCUMENT-IDENTIFIER: US 5987334 A
TITLE: Multi-modal handy phone

Detailed Description Text (14):
In this case, a communication is performed making use of a radio module MODa corresponding to the network Na. At the beginning of the communication, telephone number information (telephone number itself, for instance) of the calling party is transmitted from base station of the network Na, which is registered in the telephone number register 4 of the multi-modal handy phone 1. For the telephone number register 4, a volatile memory such as a RAM (Random Access Memory) or an SRAM (Static RAM) is preferably applied for security control of the calling party.

Detailed Description Text (30):
The user may also preset priority of each of the radio telephone networks N1 to Ni in the network selector 11 by way of the keyboard according to his convenience, such as according to service charge of each of the radio telephone networks N1 to Ni, width of its service area, or robustness against movement of its mobile terminals, for instance.

Detailed Description Text (31):
Furthermore, there may be preset also a plurality of priority sets together with their identifying codes.

Detailed Description Text (32):
Now, operation of the multi-modal handy phone 10 of the embodiment is described in connection with a case where are preset a first priority set according to service charges with a first priority code '#1', a second priority set according to widths of service areas with a second priority code '#2' and a third priority set according to robustness against movement of mobile terminals with a third priority code '#3', by way of example.

Detailed Description Text (33):
When calling a telephone number, user of the multi-modal handy phone 10 first enters the second priority code '#2', for example, followed by the telephone number. Then, the network selector 11 of the multi-mode handy phone 10 indicates the changeover unit 3 to select all of the radio modules MOD1 to MODi sequentially for obtaining available networks {Nk} (k being a certain integer not more than i) checked by the monitoring means 2, among which the network selector 11 selects a network Nd, the PDC system for example, having a highest priority in the second priority set, and so the calling unit 5 calls the telephone number through the corresponding radio module MODd selected by the network selector

11, the telephone number information being registered in the telephone number register 4.

Detailed Description Text (34):
When the monitoring means 2 detects degradation of the communication quality through the network Nd because of the multi-modal handy phone 10 entering into a sub-mall out of its service area, for example, the monitoring means 2 informs the network selector 11 to select another network. Then, the network selector 11 selects a network Ne among available networks {Nl} (l being a certain integer not more than i) newly checked, the PHS for example, having a highest priority in the priority set indicated by the user, '#2' in the example, in the same way as above described, and the calling unit 5 calls the telephone number registered in the telephone number register 4 by way of the corresponding radio module MODe.

Detailed Description Text (36):
When degradation of communication quality is detected during a communication through a network Nf called from the other party in case the first priority set '#1' is pre-set by the user, the network selector 11 selects a network Ng, the PHS for example, having a highest priority representing a cheapest service charge among available networks {Nm} in the same way, through which the calling unit 5 calls the telephone number transmitted through the network Nf and registered in the telephone number resister 4 for reopening the communication through the network Ng.

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US Reference Group (1):
4996715 19910200 Marui et al. 455/421

US Reference Group (11):
5732347 19980300 Bartle et al. 455/421

CLAIMS:

2. The radio telephone system recited in claim 1, wherein said multi-modal handy phone further comprises a network selector for selecting an available network among the plurality of radio telephone networks according to priority preset by a user.

11. A radio telephone system having a multi-modal handy phone

accessible to a plurality of radio telephone networks, said multi-modal handy phone comprising:

a plurality of radio modules, each of said radio modules adapted to access a corresponding one of the plurality of radio telephone networks;

a communication monitor monitoring communication quality between said multi-modal handy phone and each of the plurality of radio telephone networks;

a changeover unit selecting one of the plurality of radio modules according to a result of monitoring of said monitor;

a telephone number register storing a telephone number of the other party with which said multi-modal handy phone is in communication, said telephone number of the other party being transmitted from one of the plurality of radio telephone networks when the multi-modal handy phone is called through said one of the plurality of radio telephone networks;

a calling unit calling a telephone number registered in said telephone number register by way of one of said plurality of radio modules selected by said changeover unit, said calling unit being controlled by said changeover unit to automatically call the telephone number registered in the telephone number register through one of said radio modules when the communication monitor determines that a presently used one of the radio telephone networks has become unavailable;

a user interface unit interfacing signals to be sent and received through said one of said plurality of radio modules selected by said changeover unit with a user; and

a network selector selecting one of the radio modules for further communication based on user set priority data.

12. The radio telephone system of claim 11, wherein the user set priority data include at least one of:

service charge of each of the radio telephone networks;

extent of the service area of each of the radio telephone networks; and

robustness of each radio telephone network with respect to movement of mobile terminals of the radio telephone network.